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10/697,108

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EXAMINER

LEE, SIU M

ART UNIT

PAPER NUMBER

2611

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/697,108

Applicant(s)

BEISEL ET AL.

Examiner

Siu M. Lee

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-6 and 8-12 have been considered but are moot in view of the new grounds of rejection because of the amendment.
2. Applicant's arguments, see page 7, filed 6/6/2007, with respect to "Objection to the Specification" have been fully considered and are persuasive. The objection of the specification has been withdrawn.

### ***Claim Objections***

3. Claim 9 is objected to because of the following informalities:

Claim 9 has two data signal; an input data signal and a data signal with a predetermined signal status. Line 8 recites "transmitting said data signal as an output data signal", it will be more clear to specific the said data signal as the input data signal or the data signal with a predetermined signal status.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukushima et al. (US 6,205,562 B1).

(1) Regarding claim 1:

Fukushima et al. discloses a digital communication device (path switching apparatus used in a node of a uni-directional protection switch ring system in figure 7) comprising a plurality of interconnected modules (the alarm detect unit 104, guard timer 106 and alarm management circuit 108 for the input path 101 and the alarm detect unit 105, guard timer 107 and alarm management circuit 109 for the input path 101 as shown in figure 7) for processing and handling received data signals, wherein said interconnected modules each comprise monitoring means (alarm detect unit 104 and 105 to detect a alarm in the incoming data from path 101 and 102 respectively, column 4, lines 21-23 and lines 52-55) for monitoring whether said data signal is erroneous without manipulating or analyzing bits or bytes of said data (the alarm detect unit 104 and 105 monitor for a line failure occurrence state signal in the path 101 and 102, if there is a line failure, the data signal must be erroneous, figure 9 and 10) and for generating an output data signal having a predetermined signal status if said data signal is erroneous (guard timer 106 and 107 delay alarm information generated by the alarm detect unit 104 and 105 by a predetermined time and the alarm management circuit 108 and 109 will computes the logical product of the alarm information and the delayed alarm information dependent on whether the path is an active path or standby path, column 7, lines 34-54, figure 10).

(2) Regarding claim 2:

Fukushima et al. discloses a digital communication device comprising:

a first I/O module (NODE-a 701 in figure 3) for receiving a data signal and transmitting two copies of said data signal (NODE-a 701 received an incoming data and transmit a copy of data signal on the working path 709 and another copy of the data signal on the protection path 710 as shown in figure 3, column 1, lines 65-66);

at least two interconnected modules (the alarm detect unit 104, guard timer 106 and alarm management circuit 108 for the input path 101 and the alarm detect unit 105, guard timer 107 and alarm management circuit 109 for the input path 101 as shown in figure 7) for processing said data signal, wherein a first group of said interconnected modules receiving said first copy of said data signal (the alarm detect unit 104, guard timer 106 and alarm management circuit 108 receives the data signal from the input path 101 as shown in figure 7) and a second group of said interconnected modules receiving said second copy of said data signal (the alarm detect unit 105, guard timer 107 and alarm management circuit 109 receives the data signal from the input path 101 as shown in figure 7); and

a second I/O modules (switch control circuit 110 in figure 7) for receiving said copies of the data signal transmitted by said interconnected modules (switch control circuit 110 receives the output from the alarm management circuits 108 and 109, column 7, lines 55-60), said second I/O module comprising means for monitoring and received copies of said data signal (switch control circuit 110 receives output from the alarm management circuits 108 and 109 and based on the output from 108 and 109 to

control the path selector 103 to output either path 101 or 102) and transmitting those copy of said data signal which has not said predetermined signal status (the switch control circuit will control the path selector 103 to output the path that doesn't have the line failure occurrence signal on it).

(3) Regarding claim 7:

Fukushima et al. discloses wherein first I/O module (NODE-a 701 in figure 3) comprises monitoring means for monitoring said received signal and for generating an output data signal having a predetermined signal status if said received data signal is erroneous (NODE -a 701 is a uni-directional protection switch node and each uni-directional protection switch node comprises a path switching apparatus as shown in figure 7, column 8, lines 15-18, each path switching apparatus comprises alarm detect unit 104, 105 (monitoring means) to monitor if there is a line failure occurrence signal in the incoming data signal and guard timer 106, 107, and alarm management circuit 108, 109 (generating means) for generating a alarm occurrence state signal (404 or 405 in figure 10) if the data signal is erroneous, column 8, line 48 – column 9, line 25).

(4) Regarding claim8:

Fukushima et al. discloses wherein first I/O module receives a copy of the data signal via a protection line (input path 102 is the protection line in figure 7) and comprises monitoring means (alarm detect unit 104 in figure 7) for monitoring said received data signal supplied via a working line (input path 101 is the working line) and for transmitting said copy of said data signal if said received data signal is erroneous (line failure occurrence signal in the input path 101) (when alarm detect unit 104 detect

a line failure occurrence signal, the switch control circuit will control the path selector 103 to switch to the protection path (input path 102), switching case A in figure 8).

(5) Regarding claim 9:

Fukushima et al. discloses the a method comprising the steps of:

receiving an input data signal (alarm detect unit 104 in figure 7 receives an input signal from path 101);

checking the input data signal whether it is erroneous without manipulating or analyzing bits or bytes of said data signal (alarm detect unit 104 check if the data has a line failure occurrence state signal (signal 401 in figure 10) in the incoming data without checking the bits or bytes of said data signal, column 8, line 49-50);

if the input data signal is erroneous, generating a data signal with a predetermined signal status (the output signal 404 in figure 10 is generated when the path 101 is an active path, column 8, lines 53-55) , and

transmitting said data signal as an output data signal (when path 101 has a line failure, the signal 404 is output from the alarm management circuit 108 in figure 7 to the switch control circuit 110 as an output signal).

(6) Regarding claim 12:

Fukushima et al. discloses wherein said output data signal is checked whether it has said predetermined signal status, and if so, a copy of input data signal is transmitted as said output data signal (the output signal from the alarm management circuit 108 is input to the switch control circuit 110 in figure 7, if the input signal is the alarm occurrence state signal 404 in figure 10, the switch control circuit 110 will control

the path selector 103 to switch to path 102 as the output data signal, column 7, lines 55-60).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. (US 6,205,562 B1) in view of Feinberg et al. (US 2002/0167694 A1).

Fukushima et al. discloses all the subject matter as discuss in claim 1 and 9 except wherein said monitoring means comprises a threshold detector.

However, Feinberg et al. discloses a monitoring means comprises a threshold detector (the processor 240 in figure 2 determine if the signal output by the photodiode 220 is below a threshold level, if it is below a threshold level, it indicates that there is a problem on the path and switch between service and protection path, paragraph 0025, lines 7-13).

It is desirable to have the monitoring means comprises a threshold detector because it can detect failure of a service path by the photodiode is very fast since there are few if any propagation delay, paragraph 0045, lines 2-6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the

teaching of Feinberg et al. in the system of Fukushima et al. to improve the reliability of the system.

8. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. (US 6,205,562 B1) in view of Fee (US 6,285,475 B1).

Fukushima et al. discloses all the subject matter as discuss in claim 1 and 9 except wherein said monitoring means comprises a frequency detector.

However, Fee discloses wherein said monitoring means comprises a frequency detector (signal detector 680 in figure 6A include a tone detector tuned to the subcarrier modulation frequency to selectively determine the presence of the monitoring signal 610 (a subcarrier signal 610 may range from 1KHz to 10KHz), column 9, lines 24-26, lines 49-58).

It is desirable to have the monitoring means comprises a frequency detector because by detecting the sub-carrier signal, fault can be determined reliably and cheaply (column 6, lines 43-44). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Fee in the system of Fukushima et al. to improve the reliability and lower the cost of the system.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. (US 6,205,562 B1) in view of Ramaswami et al. (US 6,597,826 B1).

Fukushima et al. discloses all the subject matter as discussed in claim 1 except communication device is a cross-connect device and wherein said interconnected modules are switching matrix components.

However, Ramaswami et al. discloses that communication device is a cross-connect device (optical cross-connect switching system 100 in figure 1, column 4, lines 19-21) and wherein said interconnected modules are switching matrix components (the first optical switch core 240 includes a first optical switch matrix 241 and a second optical switch matrix 242, column 5, lines 33-35).

It is desirable for the communication device to be a cross-connect device and wherein said interconnected modules are switching matrix components because it provides low-loss bridging capabilities (column 2, lines 11-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Ramaswami et al. in the system of Fukushima et al. to improve the reliability of the system.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. (US 6,205,562 B1) in view of Iwamoto et al. (US 5,790,520).

Fukushima et al. discloses all the subject matter as discuss in claim 1 except wherein said predetermined signal status of said data signal is zero (low signal).

However, Iwamoto et al. discloses an unequipped signal wherein all bits of the signal are zero (column 3, lines 65-67).

It is desirable to have the predetermined signal status of said data signal is zero because a service can be continuously carried out without interruption by automatically switching (column 5, lines 1-4). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Iwamoto et al. in the system of Fukushima et al. to improve the reliability of the system.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Frankel et al. (US 5,187,706) discloses a dual access rings for communication networks. Achour et al. (US 6,928,428 B2) discloses an optical communication system with back-up link, Hoch (US7,180,867) discloses an apparatus and method for flow path based fault detection and service restoration in a packet based switching system.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Siu M. Lee whose telephone number is (571) 270-1083. The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Siu M Lee  
Examiner  
Art Unit 2611  
8/22/2007

A handwritten signature in black ink, appearing to read "Chieh M. Fan", with a stylized flourish at the end.

CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER